sub B5 21. (Amended) A computer-readable storage medium storing a program for implementing a method of performing data communication between a first equipment that performs wireless data transmission and reception according to a first protocol and a second equipment that performs data transmission and reception through a bus according to a second protocol, the program comprising:

code for a processing step of performing format conversion between data according to the first protocol and data according to the second protocol,

wherein the processing step does not generate command data, relative to a command included in received data, for controlling the first equipment and the second equipment.

REMARKS

This application has been reviewed in light of the Office Action dated May 24, 2000. Claims 1-21 remain pending in this application and have been amended to define more clearly what Applicants regard as their invention. Claims 1, 7, 8, 12, 13, 15, and 21 are in independent form. Favorable reconsideration is requested.

Claims 2, 8, and 15 were rejected under 35 U.S.C.

§ 112, second paragraph, as being indefinite. The Office Action states that "the term "PIAFS" or "PHS Internet Access Forum Standard" is not the standard referenced in the specification with a date or a copy provided."

Applicants submit that the term "PIAFS", which refers to the PHS Internet Access Forum Standard, is referenced in the specification at, for example, page 2, lines 4-5 and page 9, lines 19-20. A copy of the PIAFS Microcode is attached to the Information Disclosure Statement filed with the present Amendment. Accordingly, Applicants submit that Claims 2, 8, and 15 are sufficiently definite, and respectfully request withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

The Office Action rejected Claims 1, 3, 4, 5-9, 12, 15, and 17-21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,579,239 (Freeman et al.) in view of U.S. Patent No. 6,038,625 (Ogino et al.).

The Office Action rejected Claims 13 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Freeman et al. in view of Ogino et al., and further in view of U.S. Patent No. 5,666,159 (Parulski et al.).

The Office Action rejected Claims 2, 10, 11, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Freeman et

al. in view of Ogino et al., and further in view of European Application No. 886 420 A2 (Kagaya et al.).

Applicants submit that independent Claims 1, 7, 8, 12, 13, 15, and 21, together with the claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

The aspect of the present invention set forth in Claim 1 is directed to a data communication apparatus with a function of performing data communication between a first equipment that performs wireless data transmission and reception according to a first protocol and a second equipment that performs data transmission and reception through a bus according to a second protocol. The apparatus includes a conversion unit for performing a format conversion between data according to the first protocol and data according to the second protocol. The conversion unit does not generate command data, relating to a command included in received data, for controlling the first and second equipment. As an example, the data communication apparatus of Claim 1 may be a home system that enables a plurality of different electronic equipment, all operating according to different protocols, to communicate with one another.

One important feature of Claim 1 is that the conversion unit merely converts a command in the first protocol into a command in the second protocol, but does not generate any new command for controlling the first and second equipment.

Freeman et al., as understood by Applicants, relates to a remote video transmission system. Apparently, Freeman et al. teaches that audio/visual signals are digitized and compressed by the system, and then the compressed digital signal is transmitted over low bandwidth lines to a receiving end. At the receiving end, the signal is decompressed and converted to a signal for broadcast.

Ogino et al., as understood by Applicants, relates to a system that provides device identification within an audio/visual network. Apparently, Ogino et al. teaches that a standard bus, such as the IEEE 1394 serial communication bus, connects a plurality of electronic equipment. That is, each of the plurality of electronic equipment of the system adheres to the IEEE 1394 standard protocol.

Applicants submit that a combination of Freeman et al. and Ogino et al., assuming such combination would even be permissible, would fail to teach or suggest a data communication apparatus that performs data communication between equipment of

different protocols, and that includes "a conversion unit adapted to perform a format conversion between data according to the first protocol and data according to the second protocol, wherein said conversion unit does not generate command data, relative to a command included in received data, for controlling the first equipment and the second equipment," as recited in Claim 1.

Freeman et al., as understood by Applicants, merely teaches the transmission of data between two equipment operating under the same protocol, wherein the data is digitized and compressed at the transmission end, and decompressed and de-digitized at the receiving end. Ogino et al., as understood by Applicants, merely teaches the use of an IEEE 1394 bus for interconnecting a plurality of equipment that utilize the IEEE 1394 standard protocol. Nothing has been found in either of the cited references that teaches or suggests a data communication apparatus that enables communication between equipment operating under different protocols.

Accordingly, Applicants submit that Claim 1 is patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Independent Claims 15 and 21 are method and computer memory medium claims corresponding to apparatus Claim 1, and are

believed to be patentable for at least the same reasons as discussed above in connection with Claim 1. Additionally, independent Claims 7, 8, 12, and 13 include the same features as those discussed above in connection with Claim 1. Accordingly, Claims 7, 8, 12, and 13 are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

As to Claim 13, Applicants submit that Parulski et al., which is understood to relate to an electronic camera system that selectively transmits electronic image data to a plurality of remote base units, like Freeman et al. and Ogino et al. discussed above, fails to teach or suggest a data communication system that converts between different types of control data without generating new command data.

Accordingly, Applicants submit that Claim 13 is patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

A review of the other art of record has failed to reveal anything that, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as applied against the independent claims herein. Therefore, those claims are respectfully submitted to be patentable over the art of record.

The other rejected claims in this application depend from one or another of the independent claims discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Amended) A data communication apparatus [which performs] with a function of performing data communication between a first equipment [performing] that performs wireless data transmission and reception according to a first protocol and a second equipment [performing] that performs data transmission and reception through a bus according to a second protocol, said apparatus comprising:

a conversion [means for performing] unit adapted to perform a format conversion between data according to [said] the first protocol and data according to [said] the second protocol,

wherein said conversion unit does not generate command data, relative to a command included in received data, for controlling the first equipment and the second equipment.

2. (Amended) An apparatus according to Claim 1, wherein the first protocol is a PIAFS (PHS (Personal Handyphone System) Internet Access Forum Standard) protocol, and [said] the second protocol is an IEEE (Institute of Electrical and Electronics Engineers) 1394 Standard protocol.

3. (Amended) An apparatus according to Claim 1, wherein said conversion [means] unit converts packet data according to a protocol of a transmission-side equipment into packet data according to a protocol of a reception-side equipment.

4. (Amended) An apparatus according to Claim 1, wherein said conversion [means] unit converts at least any of a recording format and a compression format.

5. (Amended) An apparatus according to Claim 1, wherein

[the] data for which [is an object of the] data transmission and reception is performed includes video data, and

each of [said] the first and second [equipments includes] equipment performs at least any of an image pickup function, a video reproduction function, a video recording function, and a video display function.

6. (Amended) An apparatus according to Claim 1, wherein [the] data wirelessly transmitted by [said] the first equipment includes control data for controlling an operation

of [said] the second equipment.

7. (Amended) A data communication system [includes] comprising:

a first equipment [for performing] adapted to perform wireless data transmission and reception according to a first protocol[,];

a second equipment [for performing] adapted to perform data transmission and reception through a bus according to a second protocol[,]; and

a data communication apparatus [for performing] adapted to perform data communication between said first equipment and said second equipment, [characterized in that] wherein

said data communication apparatus comprises a conversion [means for performing] unit adapted to perform format conversion between data according to [said] the first protocol and data according to [said] the second protocol, and

the conversion unit does not generate command data, relative to a command included in received data, for controlling the first equipment and the second equipment.

8. (Amended) A data communication system [which includes] comprising:

a first equipment [for] adapted to wirelessly [transmitting] transmit data[,];

a home station [for receiving] adapted to receive the data wirelessly transmitted from said first equipment[,]; and

a second equipment connected to said home station through a home bus, [characterized in that] wherein

said home station performs format conversion of the data wirelessly transmitted from said first equipment, so as to adapt the received data for [said] the home bus, and then said home station transmits the converted data to said second equipment through [said] the home bus, and

said home station does not generate command data, relative to a command included in the received data, for controlling said first equipment and said second equipment.

9. (Amended) A system according to Claim 8, wherein each of said first and second [equipments includes] equipment performs at least any of an image pickup function, a video recording function, a video reproduction function, and a video display function.

10. (Amended) A system according to Claim 8, wherein

[the] wireless data transmission is performed [by data transfer] according to a PIAFS protocol,

[the] data transmission through [said] the home bus is performed [by data transfer] according to an IEEE 1394 Standard protocol, and

said home station performs the format conversion [by changing the data in] on packet data [of] for each protocol.

11. (Amended) A system according to Claim 10, wherein said home station [also] converts at least any of a recording format and a compression format.

12. (Amended) A data communication system [which included] comprising:

a first equipment [for performing] adapted to perform wireless data transmission and reception[,];

a second equipment [for performing] adapted to perform data transmission and reception through a home bus[,]; and

a home station [for performing] adapted to perform

wireless data transmission and reception with said first equipment and [performing] to perform data transmission and reception with said second equipment through [said] the home bus, [characterized in that] wherein

said home station performs format conversion between [the] data wirelessly transmitted and received by said first equipment and [the] data transmitted and received by said second equipment through [said] the home bus, and

said home station does not generate command data, relative to a command included in received data, for controlling said first equipment and said second equipment.

13. (Amended) A data communication system [which includes] comprising:

a wireless telephone equipment[,];

a home station [for performing] adapted to perform transmission and reception of wireless data with said wireless telephone equipment[,]; and

a controlled equipment connected to said home station through a home bus and controlled according to equipment control data on [said] the home bus, [characterized in that] wherein

said home station performs format conversion

between equipment control data included in the wireless data and the equipment control data on [said] the home bus, and

said home station does not generate command data, relative to a command included in received data, for controlling said wireless telephone equipment and said controlled equipment.

14. (Amended) A system according to Claim 13, wherein said wireless telephone equipment includes an operation panel [capable of changing] adapted to change a screen in correspondence with the wirelessly transmitted equipment control data.

15. (Amended) A data communication method [with performs] for performing data communication between a first equipment [performing] that performs wireless data transmission and reception according to a first protocol and a second equipment [performing] that performs data transmission and reception through a bus according to a second protocol, said method comprising:

a [conversion] processing step of performing format conversion between data according to [said] the first protocol and data according to [said] the second protocol,

wherein said processing step does not generate command data, relative to a command included in received data, for controlling the first equipment and the second equipment.

16. (Amended) A method according to Claim 15, wherein [said] the first protocol is a PIAFS protocol, and [said] the second protocol is an IEEE 1394 Standard protocol.

17. (Amended) A method according to Claim 15, wherein said [conversion] processing step includes [a step to convert] converting packet data according to a protocol of a transmission-side equipment into packet data according to a protocol of a reception-side equipment.

18. (Amended) A method according to Claim 15, wherein said [conversion] processing step includes [a step to convert] converting at least any of a recording format and a compression format.

19. (Amended) A method according to Claim 15, wherein

[the] data for which [is an object of the] data

transmission and reception is performed includes video data, and

each of said first and second [equipments includes] equipment performs at least any of an image pickup function, a video reproduction function, a video recording function, and a video display function.

20. (Amended) A method according to Claim 15, wherein [the] data wirelessly transmitted by [said] the first equipment includes control data for controlling an operation of [said] the second equipment.

21. (Amended) A computer-readable storage medium [which computer-readably stores a process step] storing a program for implementing a method of performing data communication between a first equipment [performing] that performs wireless data transmission and reception according to a first protocol and a second equipment [performing] that performs data transmission and reception through a bus according to a second protocol, [said process step] the program comprising:

code for a [conversion] processing step of performing format conversion between data according to [said]

the first protocol and data according to [said] the second protocol,

wherein the processing step does not generate command data, relative to a command included in received data, for controlling the first equipment and the second equipment.

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